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May 20, 2009

Daniel P. Peters, P.E.
Sr. Environmental Engineer
Covanta of SEMASS
141 Cranberry Highway
West Wareham, MA 02576

Dear Mr. Peters:

Thank you for the 2008 Material Separation Plan 4 ("MSP4") Annual Report. The Massachusetts Department of Environmental Protection ("MassDEP") has reviewed the Covanta SEMASS ("SEMASS") facility report and found that the report included all relevant elements and provided good summaries of your MSP4 programs.

The SEMASS report will be posted on MassDEP's website in the next month along with a summary comparison of MSP results across facilities. We look forward to working with you on the continued implementation of MSP4.

As discussed in our MSP strategy meeting on May 1, 2009, a MSP5 draft for CY10 is due by August 1, 2009. And unlike previous MSPs, MSP5 will be a three year plan.

Sincerely,

Greg Cooper, Deputy Division Director
Consumer Programs
Bureau of Waste Prevention

cc: Patti Howard, Covanta SEMASS



2008 Annual Report

Material Separation Plan For the Diversion of Mercury

SEMASS Resource Recovery Facility Rochester, Massachusetts

February 2009

Prepared by:

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West Wareham, Massachusetts 02576



I. INTRODUCTION

The SEMASS Partnership is pleased to submit its eighth Material Separation Plan (MSP) Report for the SEMASS Resource Recovery Facility (SEMASS RRF) covering the 2008 calendar year. The SEMASS Partnership (SEMASS) owns and operates the SEMASS RRF in Rochester, Massachusetts. Covanta of SEMASS, L.P. is the managing general partner of SEMASS. SEMASS provides solid waste processing and disposal services for more than sixty contracted communities located primarily in southeastern Massachusetts, Cape Cod, and the Boston vicinity. The SEMASS RRF receives and processes approximately 1,000,000 tons of solid waste annually. Electricity created from the processing of solid waste at the SEMASS RRF is sufficient to power approximately 75,000 households. Between 45,000 and 50,000 tons of recyclable ferrous and non-ferrous metals are typically reclaimed each year from waste processing at the SEMASS RRF.

The MSP activities for the 2008 calendar year were implemented in accordance with Material Separation Plan 4 (MSP4). MSP4 was approved by the Department of Environmental Protection (DEP) on December 15, 2006. The document was developed to guide SEMASS' continuing effort to educate and assist the SEMASS customer base in meeting the goals of the program. These goals include: 1) the identification of products in the solid waste stream that contained significant quantities of mercury and which were frequently disposed; 2) the dissemination of instructional and outreach support to educate the public about the reasons to reduce mercury in the waste stream and how to recover mercury-containing products; 3) to aid the SEMASS customer base in implementing removal and recycling programs, while supporting or supplementing existing programs; and 4) management of MSP activities involved with the above stated goals in a cost effective manner.

II. PLAN ACTIVITIES

1.0 IWSA EDUCATION AND OUTREACH.

The Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan for 2008 continues the direction set in prior years. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facility's MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MRPs on a regional basis.

IWSA Regional Program activities for 2008 consisted of the following elements:

- Radio Advertising for “Keep Mercury From Rising”
- Evaluation & Analysis of the “Keep Mercury From Rising” campaign
- Revision & Update of Website www.keepmercuryfromrising.org
- Availability of print and video materials to facilities, the public and media

Objectives. The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts’ waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS

In 2008, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, “Keep Mercury from Rising”. This campaign included two waves of radio advertisements designed to reach the broadest possible audience. The campaign used targeted advertising educating the listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2008 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;
- The Program provided information and promote local recycling events;
- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

Approach. A public survey was completed in May 2008 measuring the effectiveness of the educational campaign “Keep Mercury From Rising.” Findings from this survey guide the development of the Regional Program. The website, www.keepmercuryfromrising.org, continues to be more user-friendly, and includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and these videos are available on the website. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

1.1 Advertising

In 2008, IWSA continued to air the radio spot that was developed in 2007. The new spot capitalizes on the educational outreach in past years and offers listeners a proactive message on what to do with items that contain mercury. Set to a catchy jingle, the advertisement reminds people which products are most likely to contain mercury and “Don’t Put Mercury in the Trash!”. The advertisement directs listeners to the Keep Mercury From Rising website or their local health departments for more information. The radio spot is available for download on KeepMercuryFromRising.org.

IWSA purchased two separate two-week radio buys in 2008 and advertised on radio stations that broadened our geographic outreach. Radio is a targeted medium that provides cost-efficient mass communication and built frequency of message delivery.

The first two-week radio buy was implemented April 21 through May 2, 2008. Markets targeted by the radio buy were Boston, Worcester, New Bedford, and Cape Cod. In order to maximize the dissemination of the message, IWSA purchased another two-week radio buy that aired September 22 through October 3, 2008. Based on the results of the survey conducted after the radio ad, we believe the plan was successful in increasing public awareness.

1.2 Web Based Tool.

The www.keepmercuryfromrising.org website was completely redesigned in 2008. The new design is attractive and user-friendly. It provides new and improved information in a manner that will entice the user to explore the site and benefit more from its contents.

The site provides navigation under the masthead and incorporates information in the following categories:

- Home – includes background on Keep Mercury From Rising and information on calling 1-866-9MERCURY for more information about safe disposal options.
- Drop-off sites – provides information on where to drop-off mercury containing items.
- Spills – provides a variety of information on actions one should take in the event of a mercury spill.
- FAQs – provides answers to five common questions.
- Video/Audio – provides the five videos developed by the facilities as well as an audio file of the new radio advertisement that aired in 2008.
- Links – links were proactively sought and added to this page and efforts were made to increase the number of other website that link to <http://www.keepmercuryfromrising.org>.
- Media – provides the audio files for past and present radio advertisements as well as pdf files for our new and popular print materials.

1.3 Print Material.

IWSA continues to disseminate the popular print materials developed in 2007 to reinvigorate the regional campaign. The materials include posters identifying items containing mercury and where you can bring those items in for exchange. IWSA also developed an eye-catching handout in the shape of a trash can that opens and discusses the types of mercury containing items that should not be put in the trash. These trash can flyers were extremely popular and demand was high. Tens of thousands of these flyers were printed in 2008 and continue to be very popular in every place that they are used.

1.4 Video.

The five-minute “Keep Mercury from Rising” educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the five waste-to-energy facilities for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a “B-roll” of visuals and sound is available for media covering MSP events. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

1.5 Evaluation Tool.

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field during May 2008, and consisted of 400 completes, providing a 95% confidence level.

The fragile Massachusetts economy of 2008 took its toll on the thinking and opinions of its residents in this study. We measured dramatic year-over-year increases on issues like unemployment and the state budget, as well as increased expectation/responsibility assigned to government and government agencies when it came to environmental issues.

Respondents continue to say they are willing to pay much more for equivalent non-mercury containing items, despite the failing economy. Despite the faltering economy, mercury awareness continued to climb in key categories – it just was not matched with the associated urgent actions measured in previous years because it appears that consumers have economic challenges on the front burner today.

Fluorescent light bulb awareness has doubled since 2001 (58% vs. 29%) and was up 11 points since last year. For the first time ever, over 60% of all households said they used *several bins* for different types of products (plastic vs. newspaper). Circular wall thermostat awareness continued its climb to 68% awareness vs. 58% in the year 2005. Glass thermometer mercury awareness rebounded to 92% - a five-year high. Fish advisory awareness (86%) also rebounded and was just one point short of its all time high. Owners of mercury products were given the highest responsibility for safe disposal (4.3 mean), while waste companies (3.5 mean) were assigned the lowest responsibility rating recorded in eight years.

The polling also reflected hard realities in the public’s balancing of economic and environmental priorities. Recycling participation (80%) has now fallen for the second year in a row and is down 6 points from its high of 86% in 2006. Urgency to replace a mercury item was replaced by convenience as fewer respondents (48% today vs. 61% in 2006) would immediately stop using a mercury item in the home, if labeled, and would *wait* to replace it, as needed.

2.0 LOCAL EDUCATION AND OUTREACH.

2.1 Community and School Outreach.

Local education and outreach has proven to be an important component of executing the MSP. By making the residents within SEMASS' contracted communities more aware of how to properly dispose of mercury-containing products and elemental mercury, and of the various Activities offered by the MSP, the greater the likelihood of success.

A bullet summary list of the various local education and outreach activities completed by SEMASS during 2008 is provided below:

- On April 14th and on December 16th, SEMASS sponsored Council of SEMASS Communities (COSC) meetings with our long-term communities and provided an update of the MSP program results and solicited input on program specifics.
- SEMASS has conducted tours of our facility during which we educate participants regarding mercury awareness. Tours that were completed included:
 - The Pembroke High School AP Science class on March 11th
 - The Tabor Academy in Marion, MA, AP Science class on April 1st and April 2nd.
 - The Murphy School in Dorchester, MA on April 7th.
 - The Middleboro Cub Scouts, Den 9, Pack 20 on April 29th.
 - The Upper Cape Regional Vocational Students from Bourne, MA, on April 30th.
 - The Cape Cod Academy Science Club Students on May 6th.
 - The MassRecycles members were provided a tour on May 14th.
 - The Sharon After School Program on July 24th.
 - Residents from the Town of West Barnstable on September 5th.
 - Students from Stonehill College on September 20th.
 - Residents from the Town of Rochester, MA on October 30th.
 - Cub Scouts from the Town of Halifax, Pack 239 on November 8th.
 - The Wareham Recycling Committee on November 15th.
- SEMASS worked with and supported the Cape Cod Cooperative Extension (CCCE) of Barnstable County and its staff regarding outreach to schools.
- SEMASS manned a booth at the Massachusetts Municipal Association Trade Show and Conference on January 11th and 12th of 2008, at the Hynes Convention center in Boston, Massachusetts. This continues to be a valuable tool to reach a multitude of communities to talk about the MSP program and the various tools available to them to educate and manage mercury in the waste stream.

- On January 31st, SEMASS hosted an appreciation dinner for the members of the South Shore Recycling Cooperative (SSRC) for their efforts at Household Hazardous Waste collection sites and ongoing exchange programs for thermometers and thermostats that contain mercury. This is a useful tool to assess the efficacy of our programs in the South Shore communities and how we may improve the program.
- On February 24th, SEMASS was invited to speak at the Town of Chatham Public Library regarding waste management and the how to keep mercury-containing items out of the solid waste stream.
- On March 27th, SEMASS hosted a forum along with Center for Ecological Technology (CET) for the Health Departments in the SEMASS communities. Seventeen attendees from eight (8) towns were presented with information from MassDEP (Tina Klein) regarding the Massachusetts *Mercury Management Act* and how it relates to the diversion and collection of mercury containing items in the waste stream. SEMASS and CET then presented various programs available to these towns including permit modification for businesses, thermometer and thermostat exchange programs, and reimbursement for print materials and costs of recycling mercury collected at HHW events.
- On April 22nd, SEMASS gave a talk on Renewable Energy and Mercury Reclamation at the Linden Ponds Earth Day Celebration in the Town of Hingham, MA.
- On April 26th, SEMASS participated in the South Shore Recycling Cooperative's (SSRC) Earth Day Celebration at the Hanover Mall. SEMASS manned an informational booth at the celebration to raise awareness of mercury containing products in the home and the safe disposal of these products. SEMASS also provided the primary source of funding for the day long event.
- On May 24th, SEMASS worked participated in the Town of Chatham Recyclefest located at the Town of Chatham Transfer Station. SEMASS provided thermostats and thermometers to exchange for mercury containing items.
- On October 11th and 12th, SEMASS manned an informational booth at the Cranberry Harvest Festival in the Town of Wareham, MA sponsored by the A.D. Makepeace Company. Outreach materials related to the MSP program and mercury awareness were distributed along with general information about SEMASS, the Energy-from-Waste industry and solid waste.
- On November 6th, SEMASS participated in the Sturdy Memorial Hospital Employee Appreciation Vendor Fair, Attleboro, MA, to provide outreach and educational materials related to the MSP program and mercury awareness in cooperation with the City of Attleboro Board of Health
- On December 9th, SEMASS hosted an appreciation dinner for the volunteers from the UMass Cape Cod Cooperative Extension (CCCE) for their efforts at Household Hazardous Waste collection sites and ongoing thermometer, thermostat exchanges. We

have found it to be a useful tool to get feedback in an informal setting to improve the efficacy of the MSP program as it pertains to the Household Hazardous Waste collection and public education components.

- On December 16th, SEMASS participated as the speaker at the Falmouth Rotary Club in the Town of Falmouth, MA. The subject was how small businesses in the town can keep mercury containing items out of the waste stream and utilize fluorescent bulb collection at the town transfer station.

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2.2 Business Outreach.

In 2008, SEMASS' outreach to businesses was expanded from principally using Pozitive Environmental Solutions, Inc. (PESI) for the location of mercury-containing products and elemental mercury to include the Center for Ecological Technology (CET), Northhampton, MA, to expand the ongoing education and reclamation of mercury-containing items in the business sector.

Additional business outreach efforts were conducted by SEMASS as part of Task 3.0 activities including: Medical and Dental Facilities (see Section 3.1), the Thermostat Program (see Section 3.4), and the Business Reimbursement Program (see Section 3.9). Refer to Section 3.0 for a discussion of those business outreach and reclamation efforts.

- SEMASS has maintained memberships in various Chambers of Commerce and business associations to foster education and outreach to a variety of business in the SEMASS communities through "Business After Hours" and fundraising opportunities.
 - Cranberry Country Chamber of Commerce that serves the towns of Bridgewater, Carver, Halifax, Lakeville, Middleboro, Plympton, Raynham, Rochester, and Wareham.
 - Waltham Chamber of Commerce
 - Tri-Town Business Association serving Rochester, Mattapoisett, and Marion.

2.3 Mercury Handling and Awareness Training.

Our mercury handling and awareness training took place at various communities throughout the year. SEMASS provided training materials and literature on a smaller scale than had previously been implemented. This was to allow all employees of the Board of Health or the DPW to attend training session without the burden of traveling to a regional location.

- April 18th, at the Town of Middleboro Board of Health.
- July 17th, at the Town of Dennis Police Department for the Board of Health and the Department of Public Works

- August 12th, at the Town of Berkley Recycling Center for the Highway Department.
- September 13th, at the Town of Wrentham Household Hazardous Waste Day collection for the members of the Recycling Committee.

3.0 MERCURY REDUCTION / RECYCLING PROGRAMS.

3.1 Medical and Dental Facilities.

Task 3.1 activities during 2008 focused primarily on the collection and recycling of mercury-containing sphygmomanometers (blood pressure cuffs/monitors) with replacement of mercury-cuffs with non-mercury units. In the search for these devices, other mercury-containing products were also typically identified and reclaimed. A key target area was smaller veterinary and health care clinics led by our consultant, Center for Ecological Technology (CET). During November, CET sent out a mass-mailing to forty-nine (49) veterinary and one-hundred and thirty-five (135) medical facilities within the SEMASS communities. Follow-up will continue into 2009. :

- **Town of Middleboro.** SEMASS and CET collected five (5) thermostats and three (3) blood pressure cuffs.
- **City of Quincy.** South Suburban Oncology Center recycled four (4) blood pressure cuffs.
- **City of Quincy.** Foot Care Specialists reclaimed and recycled nine (9) blood pressure cuffs.
- **Town of Stoughton.** New England Sinai Hospital recycled and reclaimed 1.3 pounds of elemental mercury. Good Samaritan Caritas recycled and reclaimed forty seven (47) HID lamps, twenty five (25) thermometers, and thirty four (34) thermostats.
- **Town of Fairhaven.** Marion Pediatrics reclaimed and recycled two (2) blood pressure cuffs and New Bedford reclaimed and recycled twenty four (24) thermometers, twenty seven (27) blood pressure cuffs, and one half (.5) pound of elemental mercury.
- **City of Attleboro.** Sturdy Memorial Hospital reclaimed and recycled twelve (12) laboratory thermometers, and one (1) blood pressure cuff.
- **Town of Mattapoisett.** The Animal Hospital recycled two and one half (2.5) pounds of elemental mercury from their veterinary clinic.
- **Town of Pembroke.** Harborside Medical reclaimed and recycled eight (8) blood pressure cuffs.
- **Town of Rockland.** The Medical Associates reclaimed and recycled eleven (11) blood pressure cuffs.

In 2008, support from the SEMASS MSP Program was requested by the Massachusetts Department of Mental Health (DMH) to assist in the pick up and recycling of fluorescent bulbs and miscellaneous mercury-containing items that had accumulated in three area facilities located in Southeastern Massachusetts. SEMASS will continue to work with DMH to facilitate an ongoing recycling program for fluorescent bulbs and sphygmomanometers that have reached the end of their useful life. Many of the residents in our contracted communities benefit from, or support these DMH facilities noted below:

- In December, SEMASS contracted with Complete Recycling Solutions (CRS) for the pick up and reclamation of 4,704 linear feet of fluorescent bulbs, six hundred thirty (630) Compact Fluorescent Lamps (CFL's), and forty three (43) HID lamps from the Taunton State Hospital located in Taunton, Massachusetts. Packaging was provided for future lamp recycling and reclamation.
- In December, SEMASS contracted with CRS for the pick up and reclamation of four hundred seventy eight (478) linear feet of fluorescent bulbs, fifty six (56) Compact Fluorescent Lamps (CFL's), and ten (10) circular lamps from Brockton Multi Service Center located in Brockton, Massachusetts. Packaging was provided for future lamp recycling and reclamation.
- In December, SEMASS contracted with CRS for the reclamation of one thousand thirty nine (1039) linear feet of straight fluorescent bulbs, one (1) U-Tube lamp, and thirty (30) Compact Fluorescent Lamps (CFL's) from the Corrigan Mental Health Center located in Fall River, Massachusetts. Packaging was provided for future lamp recycling and reclamation.

SEMASS will continue to follow-up with any elemental mercury inquiries from dentists, orthodontists or other dental offices going forward under this task.

3.2 Thermometer Exchange Programs.

SEMASS continued to offer the communities opportunities for exchanging glass fever thermometers containing mercury with digital thermometers that were purchased by SEMASS. Activity on this task continues to be in demand and thermometers remain the most commonly recognized mercury-containing device. To inform the SEMASS customers of this opportunity, various communication methods were used throughout the year including presentations at Council of SEMASS Communities (COSC) meetings, training sessions, informational mailings, telephone calls and personal meetings with community representatives/officials as well as Task 1.0 outreach and media efforts by IWSA. SEMASS used these communication tools to advise and provide its customers with the necessary information to assist them in implementing a thermometer exchange program.

The communities employed various types of mercury thermometer collection and exchange events throughout the year. Some of these events occurred on a single day, while others continue

to occur on an ongoing basis. Household hazardous waste collection days were also used by the communities as an opportunity for collecting mercury thermometers and exchanging them for digital thermometers.

Several of the communities also held thermometer exchange events on an ongoing basis at specified location(s) within a community. These locations varied, but were typically at the Board of Health offices, Town Halls, solid waste handling and transfer stations, and/or Department of Public Works yards. Communities that provided this type of thermometer exchange opportunity gave the local residents more opportunity to participate.

A bullet list of some of the various thermometer exchange events is detailed below:

- SEMASS supported the Cape Cod Cooperative Extension's (CCCE) efforts at ongoing thermometer exchange events on Cape Cod.
 - In May, SEMASS provided three hundred (300) non-mercury fever thermometers.
 - In September, SEMASS provided two-hundred and fifty (250) non-mercury fever thermometers.
- On February 12th, SEMASS provided to the Town of Carver Board of Health twenty (20) non-mercury fever thermometers as part of the on-going exchange at the Town Hall.
- On April 3rd, SEMASS provided to the Town of Lakeville Board of Health fifty (50) non-mercury fever thermometers as part of the on-going exchange at the BOH.
- On April 29th, SEMASS provided to the Town of Seekonk Department of Public Works fifty (50) non-mercury fever thermometers as part of the on-going exchange at the DPW.
- On April 30th, SEMASS provided the Town of Middleboro thirty (30) non mercury fever thermometers as part of the on-going exchange at the BOH.
- On May 14th, SEMASS provided to the Town of Wrentham fifty (50) non-mercury fever thermometers for their thermometer exchange.
- On May 21st, SEMASS provided to the Town of Chatham Board of Health fifty (50) non-mercury fever thermometers as part of the on-going exchange at the BOH.
- On June 18th, SEMASS provided to the Town of Rochester Board of Health fifty (50) non-mercury fever thermometers as part of the on-going exchange at the BOH.
- On July 30th, the Town of Sharon Department of Public Works was provided fifty (50) non-mercury fever thermometers for their on-going exchange program.
- On August 4th, the Town of Dennis Board of Health was provided forty (40) non-mercury fever thermometers as part of an ongoing exchange at the BOH.

3.3 Community Reimbursement / Household Hazardous Product Event Support

SEMASS allocated funds to reimburse communities for the cost of contracting with a vendor to properly dispose or recycle mercury containing devices that they collected through various initiatives such as thermometer exchanges and household hazardous product days (HHP days). In addition to reimbursing the cost to reclaim these devices, SEMASS also supported the community household hazardous product or hazardous waste collection days, with various methods such as advertisements, brochures, etc. in an effort to promote their collection.

SEMASS conducted mass-mailings for mercury reimbursement to our list of community contacts in June and December. Additional reminders were provided to the representatives at COSC meetings. In these mailings, each community received a cover letter explaining the process and a reimbursement form to be completed prior to receipt of reimbursement for their mercury disposal/recycling costs.

- SEMASS issued reimbursement letter requests to contact persons of our sixty (60) long-term customers/ municipalities during two periods:
 - 1st Half 2008 Reimbursement. In June 2008, a letter request was issued to one-hundred and sixty six (166) contact persons. This letter offered reimbursement for MSP-associated costs for the period of January 1st – June 30th, 2008.
 - 2nd Half 2008 Reimbursement. In December 2008, a letter request was issued to one-hundred and sixty-six (166) contact persons. This letter offered reimbursement for MSP-associated costs for the period of July 1st – December 31st, 2008.
- SEMASS issued reimbursement payments to the following numbers of municipalities/long-term customers. Qualified expenses (mercury-related items) were reimbursed at 100% of costs.
 - 1st Half 2008 Reimbursement. Assistance was provided to eighteen (21) communities during the period with an overall participation rate of 30%. The same period in 2006 was 48%.
 - 2nd Half 2008 Reimbursement. Assistance was provided to nineteen (15) communities during the period with an overall participation rate of 32%. The same period in 2006 was 31%.
- The overall community reimbursement town participation rate for 2008 was 43% with 25 communities out of 59 participating in at least one of the reimbursement periods. For 2007 the participation rate was 43%, so this task remained relatively steady.

A critical part of Task 3.3 also includes support of household hazardous product (HHP) events. Below are some highlights of SEMASS efforts to support community HHP events during 2008:

- SEMASS provided funding support during February, May, and October to the Cape Cod Cooperative Extension for HHP advertisement of HHP events for all Cape Cod and Martha's Vineyard SEMASS communities (sixteen communities total) and reclamation of mercury devices. These HHP events ran throughout spring, summer and fall 2008.
- SEMASS provided funding support during May and October to the South Shore Recycling Cooperative (SSRC) for costs associated with printing of household hazardous waste event flyers. This provided HHP event support to fifteen (15) SEMASS communities for HHP events throughout spring, summer, and fall 2008.
- In conjunction with Task 3.2, SEMASS provided non-mercury thermometers, supplies (mercury awareness flyers, spills kits, buckets, etc.) and funding support to the Carver-Marion-Wareham Regional Refuse Disposal District for support of their community HHP and Thermometer Exchange Activities event held in the spring of 2008. This event provided HHP and mercury product recycling opportunities for residents of Carver, Marion, Mattapoisett, Wareham, and Rochester.

Much of the mercury-containing products reclaimed as part of Task 3.3 consisted of large volumes of various fluorescent bulbs including straight bulbs, U-tubes, circular lamps, compact fluorescents and HID lamps. Several large sources of mercury, however, were reclaimed during the Household Hazardous Product (HHP) events and some of these are noted below: Substantial credit should go to the Cape Cod Cooperative Extension, their volunteers, and the various Town personnel who helped sponsor these events.

- **Town of Barnstable.** Reclamation of 43.3 pounds of elemental mercury, five-hundred twenty (520) thermometers, two thousand three hundred fifty seven (2,357) mercury-containing thermostats, and one hundred seventy two (172) industrial switches.
- **Town of Plymouth.** Reclamation of thirty seven (37) thermostats.
- **Town of Bourne.** Reclamation of eighteen (18) pounds of elemental mercury, two-hundred thirty two (232) mercury thermostats, and sixty nine (69) float switches.
- **Town of Dennis.** Reclamation of seventy four (74) thermometers, sixty one (61) mercury thermostats, and nine (9) electrical switches.
- **Town of Eastham.** Reclamation of thirty two (32) mercury-containing fever thermometer, fifty two (52) thermostats, one (1) blood pressure cuff, and seven (7) electrical switches.

- **Town of Falmouth.** Reclamation of sixty three (63) fever thermometers, twenty one (21) laboratory thermometers, and five hundred nine (509) mercury thermostats, and ten (10) industrial switches.
- **Town of Harwich.** Reclamation of four hundred nine (409) mercury thermostats, and one hundred five (105) fever thermometers.
- **Town of Hingham.** Reclamation of fifty-six (56) mercury thermostats and forty eight (48) fever thermometers.
- **Town of Mashpee.** Reclamation of two-hundred forty-five (245) mercury thermostats, four (4) blood pressure cuff.
- **Town of Middleborough.** Reclamation of sixty (60) mercury thermostats, thirty five (35) fever thermometers, and two (2) large electrical switches.
- **Town of Orleans.** Reclamation of fifty seven (57) mercury thermostats, and one hundred forty four (144) float switches.
- **Town of Sandwich.** Reclamation of eighty (80) fever thermometers, forty (40) laboratory thermometers, five (5) blood pressure cuffs, and two hundred forty eight (248) mercury thermostats.

In an effort to support some of the second tier communities in their efforts to identify, separate, and reclaim mercury in the waste stream, SEMASS assisted the following towns:

- In November, the Town of Seekonk requested assistance with the disposal of seventeen (17) thermometers, nine (9) thermostats, and two (2) large electrical switches.

3.4 Commercial and Residential Thermostat Program.

This task concentrated on continuing efforts for the collection and reclamation of municipal, residential and commercial thermostats through the use of existing programs first established in MSP2. Some details of these efforts are outlined below:

- During 2008, SEMASS provided to the Town of Attleboro one-hundred (100) non-mercury containing programmable and non-programmable thermostats for their on going exchange program. The Attleboro Board of Health has an on-going exchange at their BOH office.
- During 2008, SEMASS provided to the Town of Randolph sixty five (65) non-mercury containing programmable thermostats for their on going thermostat exchange program at the BOH.

- During 2008, SEMASS provided to the Town of Plymouth fifty five (55) non-mercury containing programmable thermostats for their on going thermostat exchange program.
- During 2008, SEMASS provided the Town of Berkley twenty five (25) programmable thermostats for use in their ongoing thermostat exchange program.
- During December 2008, SEMASS provided the Town of Carver Fire Department with twelve (12) non-mercury thermostats for conversion of Fire Station HVAC systems.
- The Cape Cod Cooperative Extension (CCCE), their associated volunteer staff, and Town personnel led multiple, mercury reclamation efforts with various heating, ventilation and air conditioning (HVAC) suppliers on Cape Cod. SEMASS provided support in the form of supplies, materials and reimbursement of 100% of the reclamation costs. CCCE's efforts included the following:
 - **Town of Barnstable.** Seven different HVAC firms including:
 - Bourque HVAC. Reclamation on Oct 10th of fifty nine (59) mercury thermostats.
 - New England Refrigeration and Heat. Reclamation on March 21st of seventy four (74) mercury thermostats and two (2) large electrical switches.
 - Robies HVAC. Reclamation on November 20th of one hundred fifty six (156) mercury thermostats.
 - F.W. Webb. Reclamation on October 10th of one hundred four (104) mercury thermostats.
 - **Town of Falmouth.** Five different HVAC firms including:
 - Snow and Jones. Reclamation on November 20th of fifty six (56) mercury thermostats.
 - Bennett Plumbing and Heating. Reclamation on October 10th of ninety three (93) mercury thermostats.
 - **Town of Sandwich.** Three different HVAC firms including:
 - All Gas Heating. Reclamation on November 19th of forty one (41) mercury thermostats plus three (3) industrial switches.
 - Snow and Jones Reclamation on November 20th of eighteen (18) mercury thermostats.
 - **Town of Yarmouth.** Four different HVAC firms including:
 - Cape Cod MEchanincal. Reclamation on April 10th of eighty two (82) mercury thermostats.
 - South Shore HVAC. Reclamation on July 15th of eighty six (86) mercury thermostats, and two (2) industrial switches.
 - Tyndall and Clark. Reclamation of twenty four (24) mercury thermostats.

3.5 School Clean-Outs.

During 2008, SEMASS observed an over-all decline in demand for participation of the School Clean Out portion of the MSP program. Activities completed during 2008 include the following.

- The Wood Elementary School, Fairhaven. Reclamation included seventeen (17) mercooid switches.
- Falmouth School District, Falmouth. Reclamation included 5,910 linear feet of fluorescent bulbs.
- Upper cape Regional Vocational School, Bourne. Reclamation included 3,852 linear feet of fluorescent bulbs.

Overall, requests for support and program activity under the school clean-outs task continue to decline. SEMASS will seek to revitalize this task through more direct outreach and visits during 2009.

3.6 Universal Waste Sheds.

During 2008, SEMASS placed various Universal Waste Sheds (UWS) in communities. Some of the communities received a UWS for the first time and others received an additional shed due to an anticipated expansion of an existing bulb program or the relocation of a recycling center. The demand and support requests for this task continued on a strong-level during 2008.

- The Town of Abington received a UWS.
- The Town of Eastham received a UWS.
- The Town of Yarmouth received an additional UWS in anticipation of their expanded collection of Universal Waste.
- The Town of Wareham received an additional UWS for to expand their bulb collection program.
- The Town of Rochester was provided a UWS for their use in collecting Universal Waste.
- The Town of Marion was provided a UWS for their use in collecting Universal Waste.

3.7 Boatyards, Marinas, & Marine Facilities.

In accordance with the MSP4 plan, outreach efforts continued to target boatyards, marinas and other marine repair and/or maintenance facilities for mercury-containing products. Bilge pumps that are commonly used in boats often have mercury-containing switches that are frequently replaced when normal routine maintenance is performed on the boats. Furthermore, because many of SEMASS' contracted communities are located on the coast, this task represents a potential source of mercury that could be captured for reclamation.

Activity on this task was minimal during 2008. The majority of respondents utilize the Household Hazardous Waste Collection days organized by the Cape Cod Cooperative Extension (CCCE), and so it is difficult to segregate the amount of mercury containing items for this task from the amount collected via Task 3.3 Community Reimbursement and HHW Support .

3.8 Municipal Water Meter Reclamation.

During December 2007, a mass mailing was sent to municipal water or wastewater departments in the SEMASS communities with educational outreach information regarding the potential for mercury containing items in their department. A self addressed stamped reply postcard was included to facilitate participation in this program. To date, SEMASS has not received any notice of water departments that have mercury meters.

3.9 Business Reimbursement.

SEMASS' outreach to businesses was expanded to include the Center for Ecological Technology (CET) to provide educational information and reclamation resources of mercury containing items in the business sector. CET, working on behalf of SEMASS, mass mailed ninety-one (91) letters to hardware stores in SEMASS communities to facilitate the recycling of Compact Fluorescent Bulbs (CFL's).

- During 2008, SEMASS, working with CET, delivered to Mid Cape Home Centers a quantity of twenty (20) boxes for the collection of Compact Fluorescent Bulbs (CFL's) at the various Mid Cape Home Centers located throughout the SEMASS communities.
- During 2008, SEMASS, working with CET, delivered to Nantasket Paint and Hardware in the Town of Hull provided one (1) box for the collection of CFL's.

Additional, miscellaneous business reimbursement was provided for reclamation of the mercury-containing items:

- During 2008, SEMASS facilitated the recycling and reclamation of three hundred thirty seven (337) tanning bed bulbs from Contemporary Tan in the Town of Canton.

- On February 18th, SEMASS reclaimed and recycled eighteen (18) thermostats and one-hundred thirty-two (132) linear feet of fluorescent bulbs from Tripp Company in the Town of Braintree, MA
- In February, SEMASS worked with the Waltham Recycling Committee to recycle and reclaim 11 pounds of elemental mercury from P.R. Douglas HVAC
- On October 7th, SEMASS worked with the City of Attleboro to hold collection day for fluorescent bulbs used by small businesses in the Attleboro. Reclamation included 11,076 linear feet of fluorescent bulbs, forty two (42) circular lamps, eight seven (87) U-Tube lamps, fifty three (53) Compact Fluorescent Lamps (CFL's), one hundred twenty two (122) HID lamps, sixteen (16) fever thermometers, fifty seven (57) laboratory thermometers, and five (5) mercury thermostats.

We will seek to continue the targeted reclamation of tanning salon fluorescent bulbs and expect to expand the collection program for hardware stores and to other businesses using outreach to Boards of Health and Chambers of Commerce.

4.0 PROGRAM ADMINISTRATION.

Administration of the MSP program is conducted as part of Task 4.0 and includes implementation of the following activities on an on-going basis:

- General communications with our community members or regional recycling organizations
- Communications with the MADEP or other regulatory personnel.
- Internal progress calls and/or meetings with the program team members and management
- Program subcontractor & contractor (i.e., Veolia, CRS, CET, etc.) management, discussion, coordination, meetings, contracting & payment/account processing
- Tracking program budget and expenditures
- Tracking reclaimed/recycled quantities of mercury, and mercury-containing devices
- Maintenance of program files & records

Further administrative efforts during 2008 also included the following activities:

- Preparation, review, and submittal of the 2007 Annual Program Report (draft and final versions).
- Negotiations with the Northeast Resource Recovery Association to include recycling and reclamation of mercury to their member communities.
- Group discussions during March, April, and June with IWSA and the other WTE Plants (Covanta Haverhill, Wheelabrator) with regards to:

- Task 1.1 radio advertisement campaigns
- Task 1.5 Survey Results (Evaluation Tool)

SEMASS expects that planning and Stakeholder meetings will be conducted with the Department and our long-term communities to solicit input and feedback during early 2009 in preparation for drafting and submittal of the new MSP5 plan.

III. MERCURY RECOVERY RESULTS

The type and quantity of mercury items (elemental or products) that were diverted from the waste stream in 2008 are provided in Table 1 and are broken down by SEMASS community versus device type. The total amount of mercury reclaimed during the 2008 was estimated at an equivalent of 325.1 pounds of elemental mercury. This quantity was determined using the revised reporting formats and criteria for estimating mercury amounts developed during 2004 in conjunction with MADEP, IWSA, Wheelabrator, and Covanta Energy. These criteria include the use of unit mercury weights by type of device that were developed by NEWMOA and that are incorporated into SEMASS' MSP4 Plan.

The breakdown of mercury devices by Program Task is shown on Table 2. Please note that totals for Task 3.2 Thermometer Exchange events are typically lumped in with Task 3.3 since most communities combine reporting of these tasks. The most productive tasks appear to be Task 3.1 Medical and Dental Facilities, Task 3.2 Thermometer Exchange Programs, Task 3.3 Community Reimbursement and HHW Support and Task 3.4 Commercial/Residential Thermostats. The least productive tasks were Task 3.5 School Cleanouts, Task 3.7 Boatyards, Marinas and Marine Facilities and Task 3.8 Municipal Water Meter Reclamation.

IV. PLAN EXPENDITURES

SEMASS expenditures on the 2008 MSP program are detailed by task activity on Table 3. Expenditures for 2008 totaled \$347,193 broken down by major task as follows:

- | | |
|--|------------|
| • Task 1.0 - IWSA Education and Outreach: | \$ 50,000 |
| • Task 2.0 - Local Education and Outreach: | \$ 73,802 |
| • Task 3.0 - Mercury Reduction/Recycling Programs: | \$ 188,916 |
| • Task 4.0 - Program Administration: | \$ 34,475 |

As detailed in Table 3, MSP expenditures were comparable to budget for Tasks 1.0 and 4.0. Expenditures for Task 2.0 was higher than budget, primarily driven by increased support requests. Expenditures for Task 3.0 were less than budgeted. This was due to lack of demand for a few Task 3.0 activities (Task 3.2 – Thermometer Exchange, Task 3.5 - school cleanouts, Task 3.7 - Boatyards and Marinas, and Task 3.8 – Municipal Water Meter Reclamation).

SEMASS will step up efforts during 2008 for the Task 3.0 activities where demand and program support requests have diminished.

SUPPORTING TABLES